

IMU

**BULLETIN
OF THE
INTERNATIONAL MATHEMATICAL UNION**

**No. 22
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SECRETARIAT

**Department of Mathematics
University of Helsinki
Hallituskatu 15
SF-00100 Helsinki
Finland**

INTERNATIONAL MATHEMATICAL UNION

EXECUTIVE COMMITTEE

(January 1, 1983 - December 31, 1986)

President: Professor Jürgen Moser

Vice-Presidents: Professor L.D. Faddeev
Professor J.-P. Serre

Secretary: Professor Olli Lehto

Members: Professor S. Mizohata
Professor G.D. Mostow
Professor M.S. Narasimhan
Professor Czesław Olech
Professor J. Palis Jr.

Past President: Professor Lennart Carleson

MEMBERS OF I.M.U.

The following countries were members of the Union on January 1, 1984:

- Group I: Cameroon, Chile, China-Taiwan, Cuba, Egypt, Greece, Hong Kong, Iceland, Iran, Democratic Republic of Korea, Republic of Korea, Mexico, New Zealand, Nigeria, Norway, Philippines, Portugal, Singapore, Turkey, Viet Nam;
- Group II: Argentina, Austria, Bulgaria, Denmark, Finland, Ireland, Israel, Pakistan, Rumania, South Africa, Spain, Yugoslavia;
- Group III: Australia, Belgium, Brazil, Canada, Czechoslovakia, Democratic Republic of Germany, Hungary, India, Netherlands, Poland, Sweden, Switzerland;
- Group IV: Italy;
- Group V: France, Federal Republic of Germany, Japan, United Kingdom, USSR, USA.

47TH MEETING OF THE EXECUTIVE COMMITTEE

The Executive Committee had its meeting on May 3 and 4, 1984, at the Eidgenössische Technische Hochschule in Zürich. All members except Professor Faddeev were present.

The next meeting of the committee will be held in Paris on May 9-10, 1985.

PRELIMINARY ANNOUNCEMENT

1986 INTERNATIONAL CONGRESS OF MATHEMATICIANS

The next International Congress of Mathematicians will be held at the University of California, Berkeley, August 3-11, 1986.

The host institution is the U.S. National Committee for Mathematics of the U.S. National Academy of Sciences. The corporation ICM-86 has been formed to organize the Congress. Its Executive Director is Dr. Jill P. Mesirov. Correspondence or requests for information should be directed to ICM-86, Post Office Box 6887, Providence, Rhode Island 02940, U.S.A.

The First Announcement containing more detailed information will appear in July 1985.

SCIENTIFIC ACTIVITIES OF THE UNION

Reports on conferences supported in the year 1983:

Summer School on the History of Mathematics, Toronto, Canada,
July 25 - August 2, 1983

The International Commission on the History of Mathematics, with Professor C.J. Scriba as Chairman, the Institute for the History of Mathematics and the Institute for the History and Philosophy of Science and Technology of the University of Toronto were the major sponsors of the conference. The meeting aimed at improving mathematicians' competence in history for classroom use and acquainting historians of mathematics with the pedagogical needs of mathematicians. For that purpose, the organizers had invited seven speakers, all primarily historians of mathematics or of the mathematical sciences, and over fifty other participants to the conference. The meeting featured plenary lectures, working seminar sessions, films and library periods. IMU granted a sum of \$ 2000 to the conference.

The VIIth International Congress on Mathematical Physics, Boulder,
Colorado, August 2-10, 1983

A wide variety of the most important recent developments in theoretical physics and mathematical techniques were presented at the Conference. In addition to plenary sessions and sessions devoted to specialized topics, there were sessions for contributed papers and posters. The Proceedings of the Conference have been published in 1984. The IMU support to this conference was \$ 4000.

Second International Conference on Operator Algebras, Ideals and their
Applications in Theoretical Physics, Leipzig, GDR, September 25 -
October 2, 1983

The conference, held at the Natur-Wissenschaftlich-Theoretisches Zentrum

of the Karl-Marx University in Leipzig, was organized by the Departments of Mathematics and Physics of the KMU, the Departments of Mathematics of the Friedrich-Schiller University, Jena, the Department of Mathematics of the Ernst-Moritz-Arndt University of Greifswald, the Department of Mathematics of the Academy of Science of the GDR, and the Mathematical Society of the GDR.

The conference was attended by 145 scientists, 70 of them from GDR. There were 15 invited speakers, 73 other lectures and one seminar.

The Proceedings will be published in the series "Teubner Texte zur Mathematik".

IMU granted \$ 1000 to this conference.

The conferences organized by ICMI have been reported on in Bulletin 21 and those by CDE are reported elsewhere in this Bulletin.

Meetings sponsored in 1984:

International Colloquium on Vector Bundles on Algebraic Varieties, Bombay, India, January 9 to 16, 1984. The support of \$ 5000 has been granted. Professors M.F. Atiyah and M.S. Narasimhan were appointed IMU representatives.

ICMI-SEAMS Third Southeast Asian Conference on Mathematical Education, Haad Yai, Thailand, May 1984. IMU support for this conference has been \$ 1400.

ELAM VII (Latin American School of Mathematics), Caracas, Venezuela, July 16 - 27, 1984. The financial support of IMU was \$ 5000. Professor J. Palis Jr. served as the IMU representative.

ICME 5 (The Fifth International Congress of Mathematical Education), Adelaide, Australia, August 24 - 30, 1984. IMU support to this congress has been \$ 15 000.

The International Conference on Contemporary Problems of Algebra and Analysis, Moscow, USSR, September 24 - 28, 1984, was granted 5000 Swiss francs. Professors L. Carleson and C. Olech were appointed IMU representatives.

1985:

EQUADIFF 6 (6th International Conference on Differential Equations and their Applications), Brno, Czechoslovakia, August 25 -30, 1985. The conference was granted 7000 Swiss francs. Professor St. Hildebrandt has agreed to serve as the IMU representative.

Application for IMU sponsorship and financial support of colloquia should reach the Secretary by March 1 of the year preceding the colloquium. Even if the full picture of the colloquium is not clear by that date, an application giving the topic, the names of the officers of the Organizing Committee, if possible the names of the invited speakers, the probable size of the colloquium, and the probable size of the budget, together with the place where the colloquium will be held, should be sent in.

IMU LECTURERS

In 1971, the Executive Committee of IMU decided to invite, from time to time, a distinguished and active mathematician, of international standing to give a set of four to six lectures, on important new developments in mathematics to which the lecturer, directly or indirectly, has made a contribution, and which deserve to be 'surveyed' at some length, for the benefit of younger mathematicians as well as others. The lectures should be given at mathematical centers and they

will be published in the L'Enseignement Mathématique. Suggestions for IMU lecturers should reach the Secretary by March 1.

At its meeting in May, the Executive Committee appointed Professor M. Kashiwara, from Kyoto University, as the IMU lecturer in 1984. He has given four lectures at the University of Berne, Switzerland.

IMU FELLOWSHIP FUND

IMU Fellowship Fund is intended to provide help to advanced level graduate students, especially to those coming from less well-off countries, to take benefit from a long-period stay abroad at a well-known university or institute. Suggestions for possible candidates from the National Committees should reach the Secretary before March 1.

PRIZES OF THE UNION

Fields Medals

Fields Medals, awarded for outstanding achievements in mathematics to young mathematicians, have been granted since 1936. The fund for the medals is constituted by balances left after the Toronto Congress of Mathematicians, in 1924, and the Vancouver Congress of Mathematicians, in 1974. The International Mathematical Union has decided to award no less than two and no more than four medals at each International Congress of Mathematicians.

Medals have been awarded in the past to the following persons:

- 1936: L. Ahlfors, J. Douglas
- 1950: L. Schwartz, A. Selberg
- 1954: K. Kodaira, J-P. Serre
- 1958: K. Roth, R. Thom
- 1962: L. Hörmander, J. Milnor

1966: M.F. Atiyah, P. Cohen, A. Grothendieck, S. Smale
1970: A. Baker, H. Hironaka, S. Novikov, G. Thompson
1974: E. Bombieri, D. Mumford
1978: P. Deligne, Ch. Fefferman, G.A. Margulis, D. Quillen
1982: A. Connes, W. Thurston, S.T. Yau

The Nevanlinna Prize

The University of Helsinki has granted funds to award a Nevanlinna Prize in the mathematical aspects of information science to a young mathematician, to be given at the International Congress of Mathematicians. The first prize was awarded in 1982 to R. Tarjan.

The President of the Union, Professor Jürgen Moser, has sent, on May 30, 1984, a letter to the National Committees of the International Mathematical Union, inviting them to recommend candidates for both awards. The suggestions should contain complete biographics and motivations. They should be sent not later than January 1, 1985, to his address:

Professor Jürgen Moser
Mathematik
ETH-Zentrum
CH-8092 Zurich
Switzerland

COMMISSION ON DEVELOPMENT AND EXCHANGE

Report prepared by Professor H. Hogbe-Nlend, Chairman of CDE

The main activities in the year 1983:

Preparation of the Warsaw Congress (ICM 82/83), especially in the framework of the Committee of Travel Grants.

Scientific and financial support of the Second Inter-African Symposium on Partial Differential Equations, held at Yaoundé, Cameroun, September 1983. This symposium was organized in conjunction with the first conference of Heads of Mathematics Departments of Sub-Saharan Africa, sponsored by African Mathematical Union.

Scientific cooperation with the International Centre for Pure and Applied Mathematics, Nice, France, for the organization of the first Conference of Heads of Mathematics Departments of Arab countries, at Tunis, April 1983.

Launching the project of "Selective Bibliography on Mathematics": the first draft of this bibliography was set up J.A. Dieudonné and submitted to criticism of various mathematicians.

Activities in the year 1984:

Scientific and financial support of the Fifth Latin American "Escuela de Matematica Aplicada" on the theme "Finite Elements and Applications to Fluid Mechanics", Rio de Janeiro, Brazil, February 13 to March 2, 1984. A special grant of USD 5000 has been obtained from ICSU.

Scientific and financial support of the First Inter-African Symposium on Mathematical Modelling, Ibadan, Nigeria, August 1 to 12, 1984. A special grant of USD 5000 was obtained from ICSU.

Preparation of ICME 5, Adelaide, Australia, August 24 to 30, 1984. A travel grants committee has been set up by CDE and ICMI to help young mathematicians from developing countries to attend the congress. Members of this committee are H. Hogbe-Nlend, J.P. Kahane, A.G. Howson and J.M. Mack. A special grant of USD 8000 was received from UNESCO.

Selective Bibliography on Mathematics: the first version of this bibliography will be published in 1984.

Cooperation will be strengthened with regional mathematical bodies in Africa, Asia and Latin America for other mathematical activities planned in these regions in 1984 and for the preparation of projects for 1985.

SPECIAL DEVELOPMENT FUND

The Special Development Fund is used primarily for travel grants to young mathematicians from developing countries or from countries where severe money regulations exist, to help their attendance to the International Congresses of Mathematicians. The next goal is to collect money for travel grants for the 1986 Congress in Berkeley.

Donations to the Special Development Fund can be sent at any time and in any convertible currency to the following accounts:

No. 0862-656208-21
 Schweizerische Kreditanstalt
 Stadtfiliale Zürich-Rigiplatz
 Universitätstrasse 105
 CH-8033 Zürich
 Switzerland

No. 100020-411-USD-5705 FR
 Kansallis-Osake-Pankki
 Aleksanterinkatu 42
 SF-00100 Helsinki
 Finland

APPENDIX

The following pages consist of the audited financial report of the Union for the year 1983.

INTERNATIONAL MATHEMATICAL UNION

ACCOUNTS

FOR THE YEAR ENDED DECEMBER 31, 1983

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International Mathematical Union
University of Helsinki
Department of Mathematics
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00100 HELSINKI 10
Finland

Helsinki, 28.3.1984

AUDITORS' REPORT

We have audited the Financial Statements of the International Mathematical Union (IMU), prepared by the Executive Secretary of IMU, for the year ended December 31, 1983. The Statement of Income and Expenditure was prepared in accordance to the instructions given by the International Council of Scientific Unions in a letter dated November the 25th 1983. The Balance Sheet was prepared as the Balance Sheet of the year 1982. The accounting principles are similar to those of the year 1982.

Principles and comments:

1. Currency

The Financial Statements are expressed in US dollars. Balances in other currencies have been translated into US dollars by applying the UNESCO standard rates of exchange as at December 31, 1983.

Income and expenditure for each month was translated into US dollars at the UNESCO average rate for the month.

The average UNESCO rate for US dollar for the year closely follows the quoted market rate.

2. Income

The contributions from national members and other contributions and grants have been recorded on a cash basis. The total amount of the contributions

from national members due but not paid in 1983 is USD 15.735 for the year 1983 and USD 2.201 for the previous years (the list of dues unpaid is attached to the financial statements).

The income (USD 18.281) from the sale of the 7th edition of the World Directory of Matchematiicians is based on information given by the American Mathematical Society, we are unable to form an opinion regarding this information (no payments have been received).

3. Expenditure

Expenditure is recorded on accruals basis. The total expenditure includes USD 16.330 set aside to funds to cover future expenses based on the IMU budget for 1983-1986 made up by the Finance and Dues Committee of IMU.

4. Stock of Matchematiicians' directories

As in previous years, no account has been taken in these accounts for the stock of directories in existence at December 31, 1983 (see also note 2).


5. Bank accounts

We had no Statements on Accounts from the banks on following bank accounts as at December 31, 1983:

- Bank Handlowy, Poland, balance in statements 0, in the beginning of 1983 USD 42.759
- Day Ichikangyo, Japan balance in statements USD 146.

Having not received the Bank statements, we are unable to form an opinion regarding these bank accounts.

In our opinion, with reservation of the comments above, the Balance sheet and the Statement of Income and Expenditure give a true and fair view of the financial state of the International Mathematical Union at December 31, 1983.


Antti Helenius


Anne Pekkala

INTERNATIONAL MATHEMATICAL UNION

Statement of Income and Expenditure
for the Year Ended 31 December 1983

NOTES

1. INCOME

Allocation from Unesco, Subvention to ICSU		14.706,-
Contributions from National Members	1.	54.259,91
Sale of publications		18.281,-
Bank interest and gain on exchange		<u>2.291,83</u>
		89.538,74

II. EXPENDITUREa. Scientific Activities

Conferences		24.306,89
Grants to Individuals/Organizations	2.	37.712,44

b. Routine Meetings

Bureau/Executive Committee		9.847,92
Other		1.524,37

c. Publications

	3.	8.325,12
--	----	----------

d. Administrative Expenses

General Office Expenses		469,82
Audit fees		692,52
Bank charges and loss on exchange		<u>3.192,28</u>
		87.071,36

Excess of Income Over Expenditure		3.467,38
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Accumulated Balance at 1 January 1983		<u>98.891,-</u>
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Accumulated Balance at 31 December 1983		102.358,38
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Balance Sheet at December 31, 1983

	Notes	1983		1982
ASSETS				
Bank accounts and cash	4			
Current accounts		47.850	75.885	
Deposit accounts		37.643	37.691	
Cash		<u>37</u>	<u>-</u>	113.576
Premayments	5	<u>21.000</u>		<u>34.345</u>
TOTAL ASSETS		106.530		147.921
BALANCE DUE				
Due from the World Directory of Mathematicians		18.281		
LESS: LIABILITIES	6			
Creditors and accruals		<u>4.690</u>		<u>5.693</u>
		120.121		142.228
		=====		=====
ACCUMULATED FUNDS				
General fund	7			
Balance at December 31, 1982		98.891	112.453	
Excess of income over expenditure		3.467	(3.562)	
Transfer to Congress fund		<u>--</u>	<u>(10.000)</u>	
Balance at December 31, 1983		102.358		98.891
International Congress fund				
Balance at December 31, 1982		43.337	33.337	
Transfer to expenditure		(43.337)	<u>10.000</u>	43.337
International Congress of Mathematicians 1986		<u>8.600</u>		
Balance at December 31, 1983		<u>8.600</u>		
		Transfer	110.958	<u>142.228</u>

	Transfer	110.958	142.228
Special Development Fund	7		
Donations	<u>1.433</u>		
Balance at December 31, 1983		1.433	
Program Committee fund			
Program Committee for ICM 1986	<u>1.950</u>		
Balance at December 31, 1983		1.950	-
General Assembly fund			
General Assembly 1986	<u>1.193</u>		
Balance at December 31, 1983		1.193	-
World Directory of Mathematicians fund			
World Directory, VIII ed.	<u>4.587</u>		
Balance at December 31, 1983		<u>4.587</u>	-
		<u>120.121</u>	<u>142.228</u>
		=====	=====

INTERNATIONAL MATHEMATICAL UNION

1. STATEMENT OF CONTRIBUTIONS RECEIVED FROM NATIONAL MEMBERS DURING THE YEAR ENDED DECEMBER 31, 1983

MEMBER	PRE 1983	1983	TOTAL
Australia		1.559	
Austria		837	
Belgium	1.154		
Brazil	1.176	1.635	
Bulgaria		798	
Cameroon		390	
Canada		1.708	
Chile		410	
China-Taiwan		427	
Cuba	284	360	
Czechoslovakia		1.708	
Denmark		817	
Finland		812	
France	279	2.717	
Germany, Dem. R. of		1.708	
Germany, Fed. R. of		4.087	
Greece		409	
Hong Kong		390	
Hungary		1.675	
Iceland		390	
India		1.635	
Iran	301	427	
Ireland		817	
Israel		854	
Italy	2.111		
Japan		1.174	
Korea, Dem. R. of		409	
Korea, Rep. of		427	
New Zealand		403	
Norway		409	
Pakistan	577		
Philippines		409	
Portugal		419	
Singapore	295	419	
South Africa		854	
Spain		817	
Sweden		1.635	
Switzerland		1.635	
United Kingdom		4.207	
USSR		3.015	
USA		4.295	
Viet Nam	577	409	
	<u>6.754</u>	<u>47.506</u>	<u>54.260</u>

Note:

-Poland paid its dues for 1983 in the year 1982.

-Brazil's pre 1983 dues were paid by Brazil in 1981 as part of its dues for the years 1980-1981 but the sum was lost in bank transactions and recovered in 1983

2. GRANTS TO INDIVIDUALS/ORGANIZATIONS

I.C.M.I	2.010
C.D.E	1.421
C.T.S	400
I.C.S.U	1.324
Travel grants to young mathematicians	<u>32.557</u>
	37.712
	=====

3. PUBLICATIONS

Publication expenditure is made up as follows:

	<u>1983</u>	<u>1982</u>
I.M.U. bulletin	238	2.915
World Directory of Mathematicians, VII ed.	3.500	20.516
World Directory of Mathematicians, VIII ed.	<u>4.587</u>	-
	8.325	23.431
	=====	=====

NOTES TO BE READ IN CONNECTION WITH THE FINANCIAL STATEMENT
OTHER NOTES

			1983		1982	
4. Banks and cash			-----	-----	-----	-----
The amount held with banks is made up as follows			Currency	US \$	Currency	US \$
			-----	----	-----	----
The Chase Manhattan Bank	USA	US \$	-	2.731	-	7.705
Credit Swiss	SWITZERLAND					
- Current account		FS	43.179	19.807	51.967	24.398
- Deposit account		FS	82.063	37.643	80.281	37.691
Société Général	FRANCE	FF	-	-	6.273	877
Kansallis-Osake-Pankki	FINLAND	FIM	13.092	2.257	-	-
Kansallis-Osake-Pankki	FINLAND	US \$	-	6.026	-	-
Kansallis-Osake-Pankki	FINLAND	FS	36.804	16.883	-	-
Day Ichikangyo	JAPAN	YEN	36.407	146	36.407	<u>146</u>
						70.817
Bank Handlowy	POLAND	US \$	-	-	42.759	42.759
			=====	-----	=====	-----
				85.493		113.576
Cash in hands				<u>37</u>		-
				<u>85.530</u>		<u>113.576</u>
				=====		=====

5. PREPAYMENTS

Contribution given in respect of the 5th ICME Congress
to be held in 1984

10.000

Advance payment in respect of conference

ELAM

5.000

BOMBAY

5.000

10.000

Advance payment to SEAMS, to the
regional conference to be held in 1984

1.000

21.000

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6. CREDITORS AND ACCRUALS

I.M.U. lectures
Audit

4.000
---690
4.690
=====

NOTES TO BE READ IN CONNECTION WITH THE FINANCIAL STATEMENT

7. FUNDS

These funds represent the amounts set aside to cover the following

Provided in year ended	1983 International Congress of Mathematicians	1983 Program Committee	1983 General fund	1983 General Assembly	1983 World Directory	1983 Special Development fund
-----		-----	-----	-----	-----	-----
31.12.1979	11.719					
31.12.1980	10.965					
31.12.1981	10.653					
31.12.1982	<u>10.000</u>					
	43.337		98.891			
International Congress fund						
Balance 31.12.1983						
Transfer to expenditure	(43.337)					
International Congress of Mathematicians 1986	8.600					
General fund						
Transfer from the excess of income over expenditure			3.467			
Special development fund						
Donations						1.433
Program Committee fund						
Program Committee for ICM 1986		1.950				
General Assembly fund						
General Assembly 1986				1.193		
World Directory of Mathematicians fund						
World Directory, VIII ed.					4.587	
	-----	-----	-----	-----	-----	-----
	8.600	1.950	102.358	1.193	4.587	1.433
	=====	=====	=====	=====	=====	=====

STATEMENT OF INCOME AND EXPENDITURE:
 FINANCIAL YEARS 1982 AND 1983 COMPARED

INCOME	1983	1982
Allocation from Unesco, grant to ICSU	14.706	13.808
Contributions from National Members	54.260	52.959
Special appeal fund	-	4.072
Sale of publications	18.281	1.477
Bank interest	2.126	2.427
Net exchange (loss) / gain	<u>(2.876)</u>	<u>(27.089)</u>
	<u>86.497</u>	<u>47.654</u>
EXPENDITURE		
A. MEETINGS		
Representation at meetings	7.898	14.409
Consultative committee	1.950	-
General assembly	<u>1.193</u>	<u>(1.606)</u>
	11.041	12.803
B. PUBLICATIONS	8.325	23.431
C. SCIENTIFIC ACTIVITIES		
Colloquia	13.010	(3.000)
Other activities		
ICM 1986	8.601	-
I.C.M.I.	2.696	-
Exchange commission	<u>-</u>	<u>1.000</u>
	24.307	(2.000)

D. ADMINISTRATIVES EXPENSES

Grant to C.T.S.	400		400
Grant to I.C.M.I.	2.010		2.000
Grant to C.D.E.	1.421		-
Contribution to I.C.S.U	1.324		1.115
Travel grants	32.557		-
Audit fees	693		1.608
General office expenses	802		8.412
Travel expenses	-		2.818
Bank charges	<u>150</u>		<u>629</u>
		<u>39.357</u>	<u>16.982</u>
		83.030	51.216
		=====	=====
		3.467	(3.562)

EXCESS OF INCOME OVER EXPENDITURE

Allocated to:

General fund	<u>3.467</u>		<u>(3.562)</u>
		3.467	(3.562)
		=====	=====

Note:

Figures for the year 1983 have been adjusted to correspond to the groups for the year 1982

INTERNATIONAL MATHEMATICAL UNION

The following countries had not paid their dues for the year 1983:

country	dues	USD
Argentina	1700 SFR	780
Belgium	3400 SFR	1560
Egypt	850 SFR	390
Italy	5950 SFR	2729
Mexico	850 SFR	390
Netherlands	3400 SFR	1560
Nigeria	850 SFR	390
Pakistan	1700 Sfr	780
Romania	1700 SFR	780
Turkey	850 Sfr	390
Yugoslavia	1700 SFR	<u>780</u>
		10.529

The following countries had part of their dues for 1983 unpaid:

country	remaining sum	USD
France	2.848.85 SFR	1307
Japan	6000 SFR	2752
USSR	2500 SFR	<u>1147</u>
		5.206

The following countries have not paid their dues for earlier years:

country	sum	year(s)	USD
Mexico	600 SFR	1982	275
Romania	1200 SFR	1982	550
Turkey	3000 SFR	1978-1982	<u>1376</u>
			2.201

TOTAL ===== 17.936 USD

1 USD = 2,180 Sfr = December 31, 1983